

THE COSMIC-RAY CONTRIBUTION TO LIBEB: INTERPRETATION OF LIBEB ABUNDANCES FROM CRIS

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The bulk of galactic LiBeB abundances is believed to be created during energetic inelastic collisions of cosmic-ray and interstellar medium nuclei, including CNO fragmentation and $\alpha - \alpha$ fusion. Additional sources such as big bang nucleosynthesis or neutrino-driven spallation within Type II supernovae may also add a small contribution. However, measurements of the elemental ratios Be/H, B/H, and Fe/H in old, low-metallicity halo stars indicate an overabundance of LiBeB that can not be accounted for by fragmentation of cosmic ray CNO. This interpretation assumes that the average ISM in any epoch serves as a source of material both for star formation and for cosmic rays in that epoch, contributing fragmentation products to the ISM at later times. To investigate the cosmic-ray contribution to LiBeB abundances, we will use a simple model to simulate cosmic-ray transport and present an interpretation of the abundance measurements from the Cosmic Ray Isotope Spectrometer (CRIS) during the past three years. We will discuss the implications on cosmic-ray LiBeB production at lower energies.

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